

Page 12, paragraph starting at line 19, has been amended as indicated below:

B6
As will be understood from the description made above, the present invention is capable of bringing about various advantages. According to the present invention, since the magnetic flux density estimating means is provided for estimating a magnetic flux or a magnetic flux density generated between a surface of the electromagnet on the supporting side and the electromagnetic target on the supported member, the estimated value is fed back to the power amplifier. Consequently, an improvement can be achieved, as in the magnetic flux feedback power amplifier, taking into consideration, in addition to a coil load of an electromagnet coil, transfer characteristics of a current flowing through the electromagnetic coil and generated magnetic fluxes due to characteristics of magnetic materials forming the electromagnetic yoke of the electromagnet and the electromagnetic target. Further, since the magnetic flux density estimating means is disposed within the controller, the number of signal lines within the cable is not increased.

IN THE CLAIMS:

Please amend claim 1 as indicated below:

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1. (Amended) A magnetic bearing apparatus comprising:
- a current sensor for detecting the control current output from a power amplifier;
 - a displacement sensor for detecting a displacement of a supported member; and
 - a magnetic flux or a magnetic flux density estimating means which receives at least a control current detection signal of said current sensor and a displacement detection signal of said displacement sensor for estimating a magnetic flux or a magnetic flux density generated between a